IN THE CLAIMS:

1.   (Currently Amended) A <u>video indexing device configured for receiving a</u> <u>video scene having multiple frames and forming a</u> descriptor <u>that is configured</u> ~~for the~~<u>to</u> representa~~tion~~, from a video indexing viewpoint, ~~of~~ motions of a camera or any kind of observer or observing device within any sequence of <u>one or more</u> frames of a<u>the</u> video scene, said motions ~~being~~<u>comprising</u> at least one ~~or several~~ of the following basic ~~operations~~<u>motion types</u>: fixed, panning (horizontal rotation), tracking (horizontal transverse movement, also called traveling in the film language), tilting (vertical rotation), booming (vertical transverse movement), zooming (changes of the focal length), dollying (translation along the optical axis) and rolling (rotation around the optical axis), or any combination of at least two of these operations, wherein each of said motion types, except fixed, is oriented and subdivided into two components that stand for two different directions, and represented by means of a~~n~~ histogram <u>having a dependent</u> <u>variable with</u>in ~~which the~~ values <u>that each</u> correspond to a <u>respective</u> predefined size of displacement.

2.   (Currently Amended) ~~A descriptor according to~~<u>The device of</u> claim 1, wherein~~with which~~ each motion type, assumed to be independent, has its own speed described in an unified way by choosing a common unit to represent it.

3.   (Currently Amended) <u>The device of</u>~~A descriptor according to~~ claim 2, ~~with~~<u>in</u> which each motion type speed is represented by a pixel-displacement value working at the half-pixel accuracy.

4.   (Currently Amended) The device of~~A descriptor according to~~ claim 3, ~~within~~in which, in order to work with integer values, speeds are rounded to the closest half-pixel value and multiplied by 2.

5.   (Currently Amended) The device of~~A descriptor according to~~ Claim 1, wherein ~~the~~a description afforded by said descriptor is hierarchical, by means of a representation of the motion handled at any temporal granularity.

6.   (Currently Amended) The device of~~A descriptor according to~~ claim 4, wherein given a temporal window of the video data $[n_0, n_0 + N]$ (N is the total number of frames of the window) and the speeds of each motion type for each frame, the number of frames N_{motion_type} in which each motion type has a significant speed is computed and the temporal presence is represented by a percentage, defined as follows:

$$T_{type\ of\ motion} = N_{type\ of\ motion} / N$$

the temporal presence of all the possible motions being then represented by a MotionTypesHistogram in which the values, between 0 and 100, correspond to a percentage, the values being only 0 or 100, depending on the fact that the given movement is present or not in the frame, when the window is reduced to a single frame.

7.   (Currently Amended) ~~Application of a descriptor according to Claim 1, wherein the implementation of~~an image retrieval system comprising a camera for the acquisition of ~~the~~video sequences, a video indexing device, a database, a graphical user interface, for carrying out a requested retrieval from the database, and a video monitor for displaying the retrieved information, ~~the~~an indexing operation within said video indexing device being based on ~~the~~categorization resulting from the use of said descriptor of claim 1~~amera motions~~.

8.   (New) The device of claim 1, wherein the histogram has an independent

variable with values configured to each correspond to a different one of said motion

types.

9.   (New) The device of claim 8, wherein the histogram is configured

according to the equation:

$$T_{\text{type of motion}} = N_{\text{type of motion}} / N$$

wherein the subscript "type of motion" represents the independent variable, N

represents the number of the frames that are within a window, and $N_{\text{type of motion}}$ represents

the number of frames within the window that have the one of the motion types

represented by said subscript.

10.   (New) A computer program product comprising a computer-readable

medium having a computer program comprising a sequence of instructions for:

receiving a video scene having multiple frames; and

forming a descriptor that is configured to represent, from a video indexing

viewpoint, motions of a camera or any kind of observer or observing device within any

sequence of one or more frames of the video scene, said motions comprising at least one

of the following basic motion types: fixed, panning (horizontal rotation), tracking

(horizontal transverse movement, also called traveling in the film language), tilting

(vertical rotation), booming (vertical transverse movement), zooming (changes of the

focal length), dollying (translation along the optical axis) and rolling (rotation around the

optical axis), or any combination of at least two of these operations, wherein each of said

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motion types, except fixed, is oriented and subdivided into two components that stand for

two different directions, and represented by means of a histogram having a dependent

variable with values that each correspond to a respective predefined size of displacement.

11.   (New) The product of claim 10, wherein the histogram has an independent

variable with values configured to each correspond to a different one of said motion

types.

12.   (New) The device of claim 11, wherein the histogram is configured

according to the equation:

$$T_{\text{type of motion}} = N_{\text{type of motion}} / N$$

wherein the subscript "type of motion" represents the independent variable, N

represents the number of the frames that are within a window, and $N_{\text{type of motion}}$ represents

the number of frames within the window that have the one of the motion types

represented by said subscript.